TRANSMITTAL OF APPEAL BRIEF	Docket No. 4459-0145P

In re Application of: Yu-Tuan LEE

Application No.	Filing Date	Examiner	Group Art Unit
10/620,455-Conf. #9180	July 17, 2003	S. G. Sherman	2629

Invention: LCD AND TOUCH-CONTROL METHOD THEREOF

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: November 17, 2006 .

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Dated: January 18, 2007

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Docket No.: 4459-0145P
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Yu-Tuan LEE	Before the Board of Appeals
Application No.: 10/620,455	Confirmation No.: 9180
Filed: July 17, 2003	Art Unit: 2629
For: LCD AND TOUCH-CONTROL METHOD THEREOF	Examiner: S. G. Sherman

APPEAL BRIEF ON BEHALF OF APPELLANT UNDER 37 C.F.R. § 41.37

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MS APPEAL BRIEF – PATENTS
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APPEAL BRIEF ON BEHALF OF APPELLANT
UNDER 37 C.F.R. § 41.37

MS APPEAL BRIEF - PATENTS
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Sir:

This is an Appeal from the Office Action of June 20, 2006 finally rejecting claims 1-28 in the above-identified application. The appealed claims are 1-28, and are set forth in the attached Appendix.

I. REAL PARTY IN INTEREST

The instant application is assigned to GIGNO TECHNOLOGY CO., LTD. as recorded on July 17, 2003, at Reel/Frame 014298/0301. No further assignments of this application have been made.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences for the instant application.

III. STATUS OF THE CLAIMS

Claims 1-28 are finally rejected and are set forth in the attached Appendix.

IV. STATUS OF AMENDMENTS

An Amendment has been filed on January 17, 2006 to amend claims 1, 5-18 and 21-28, specification, abstract and drawings. An Amendment has been filed on June 5, 2006 to amend drawings. A Response to final Office Action has been filed on September 20, 2006. However, no amendment has been made in the September 20 Response to final Office Action.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Claims 1-15

Independent claim 1 and its dependent claims relate to a touch-control method of an LCD, which is to sense a touch point on an LCD screen of the LCD. The LCD (1 in FIG. 1) comprises a counter electrode (14 in FIGs. 1. 2 and 4) and a substrate (12' in FIGs. 1, 2 and 4) having a plurality of data lines (174 in FIG. 1) and a plurality of scan lines (173 in FIGs. 1, 2 and 4), as discussed on page 6, lines 13-20 of the specification. The method comprises a first touch-position sensing step (S1 in FIGs. 6 and 7), which detects values of liquid crystal capacitances (C_1-C_M) formed between the scan lines (173 in FIGs. 1, 2 and 4) needed to be detected and the counter electrode (14 in FIGs. 1. 2 and 4), respectively, and detects a scan-line-direction touch position (Y) according to the values of the liquid crystal capacitances (C_1-C_M) formed between the scan lines (173 in FIG. 1, 2 and 4) needed to be detected and the counter electrode (14 in FIGs. 1, 2 and 4) during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in the writing periods. The above first touch-position sensing step (S1 in FIG. 6) is discussed on page 9, lines 4-23 and page 10, lines 1-3 of the specification.

The method comprises a charging step (S2 in FIGs. 6 and 7), which charges a voltage signal into each of the data lines (174 in FIG. 1) needed to be detected after the scan-line-direction touch position (Y) is detected. The above charging step (S2 in FIG. 6) is discussed on page 10, lines 4-7 of the specification.

The method comprises a second touch-position sensing step (S3 in FIGs. 6 and 7), which detects values of liquid crystal capacitances (C_1-C_N) formed between the data lines (174 in FIG. 1) needed to be detected and the counter electrode (14 in FIGs. 1. 2 and 4), respectively, and detects a data-line-direction touch position (X) according to the values of the liquid crystal capacitances (C_1-C_N) formed between the data lines (174 in FIG. 1) needed to be detected and the counter electrode (14 in FIGs. 1, 2 and 4) after the voltage signal is charged. The above second touch-position sensing step (S3 in FIG. 6) is discussed on page 10, lines 9-23 and page 11, lines 1-5 of the specification.

The scan-line-direction touch position (Y) and the data-line-direction touch position (X) indicate a position of the touch point, as discussed on page 11, lines 6-7 of the specification.

Claims 16-28

Independent claim 16 and its dependent claims relate to an LCD (liquid crystal display) (1 in FIG. 1), which has a counter electrode (14 in FIGs. 1, 2 and 4) and a substrate (12' in FIGs. 1, 2 and 4) having a plurality of data lines (174 in FIG. 1) and a plurality of scan lines (173 in FIGs. 1, 2 and 4), as discussed on page 6, lines 13-20 of the specification. The LCD comprises a first sensing circuit (21 in FIGs. 8 and 10), which respectively electrically connects to the scan lines (173 in FIGs. 1, 2 and 4) needed to be detected, detects values of liquid crystal capacitances (C_1-C_M) formed between the scan lines (173 in FIGs. 1, 2 and 4) needed to be detected and the counter electrode (14 in FIGs. 1, 2 and 4), and detects a scan-line-direction touch position (Y) according to the values of the liquid crystal capacitances (C_1-C_M) formed between the scan lines

(173 in FIGs. 1, 2 and 4) needed to be detected and the counter electrode (14 in FIGs. 1, 2 and 4).

The above first sensing circuit (21 in FIGs. 8 and 10) is discussed on page 11, lines 20-23 and page 12, lines 1-7 of the specification.

The LCD comprises a timing control circuit (22 in FIGs. 8 and 10), which electrically connects to the first sensing circuit (21 in FIGs. 8 and 10) and controls the first sensing circuit to detect the liquid crystal capacitances (C_1-C_M) formed between the scan lines (173 in FIGs. 1, 2 and 4) needed to be detected and the counter electrode (14 in FIGs. 1, 2 and 4) during idling time in-between writing periods, each of the scan lines (173 in FIGs. 1, 2 and 4) turning on sequentially to write image data into the LCD screen in the writing periods. The above timing control circuit (22 in FIGs. 8 and 10) is discussed on page 12, lines 8-13 of the specification.

The LCD comprises a voltage-signal generating circuit (23 in FIGs. 8 and 10), which electrically connects to the timing control circuit (22 in FIGs. 8 and 10) and each of the data lines (174 in FIG. 1), wherein the timing control circuit (22 in FIGs. 8 and 10) controls the voltage-signal generating circuit (23 in FIGs. 8 and 10) to charge a voltage signal into each of the data lines (174 in FIG. 1) needed to be detected after the scan-line-direction touch position (Y) is detected. The above voltage-signal generating circuit (23 in FIGs. 8 and 10) is discussed on page 12, lines 14-18 of the specification.

The LCD comprises a second sensing circuit (24 in FIGs. 8 and 10), which respectively electrically connects to each of the data lines (174 in FIG. 1) needed to be detected, detects values of liquid crystal capacitances (C_1-C_N) formed between the data lines (174 in FIG. 1) needed to be detected and the counter electrode (14 in FIGs. 1. 2 and 4), and detects a data-line-direction

touch position (X) according to the values of the liquid crystal capacitances (C_1-C_N) formed between the data lines (174 in FIG. 1) needed to be detected and the counter electrode (14 in FIGs. 1, 2 and 4) after the voltage signal is charged. The above second sensing circuit (24 in FIGs. 8 and 10) is discussed on page 12, lines 19-23 and page 13, lines 1-16 of the specification.

VI. GROUNDS OF REJECTION

Claims 1-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nohno, U.S. Patent No. 6,239,788, in view of Ikeda, U.S. Patent No. 5,642,134.

VII. APPELLANT' ARGUMENTS

1. Rejection under 35 U.S.C. §103(a) over Nohno, U.S. Patent No. 6,239,788, in view of Ikeda, U.S. Patent No. 5,642,134

Claims 1-15

Independent claim 1 recites a combination of steps including "a first touch-position sensing step, which detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, respectively, and detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in the writing periods", "a charging step, which charges a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected", "a second touch-position sensing step, which detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, respectively, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is charged" and "the scan-line-direction touch position and the data-line-direction touch position indicate a position of the touch point."

Appellant respectfully submits that the above combination of steps as set forth in independent claim 1 is not disclosed nor suggested by the references relied on by the Examiner.

In the present invention, the values of liquid crystal capacitances formed between the counter electrode panel and the scan lines are detected, respectively, during the idling time in-between writing periods. As defined in the specification, the writing period is the period in which each of the scan lines turns on sequentially to write image data into the LCD screen. In other words, the idling time is the time interval between the writing periods.

Unlike the present invention, Nohno in FIG. 6 discloses that one frame is time-sharingly divided into a coordinate detection period and a display period. In other words, the coordinate detection period (an X-coordinate Detection Period (by driving data lines) and a Y-coordinate Detection Period (by driving scan lines)) is within one frame, not in-between two frames. Therefore, Nohno fails to teach "detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods" as recited in claim 1.

Nohno in FIG. 6 also discloses that the coordinate detection operation is performed in an X-coordinate Detection Period (by driving data lines) **first**, and **then** a Y-coordinate Detection Period (by driving scan lines). Accordingly, the X-coordinate Detection Period (by driving data lines) occurs before the Y-coordinate Detection Period (by driving scan lines). Therefore, Nohno also fails to teach "charges a voltage signal into each of the data lines needed to be detected **after** the scan-line-direction touch position is detected" and "a second touch-position sensing step ... detects a data-line-direction touch position ... **after** the voltage signal is charged" as recited in claim 1.

The Examiner seemed to construe that since in one frame the display period is after the coordinate detection period, the voltage signal (for display) is charged into the data lines after the scan line detection take places, and that since in the next frame the coordinate detection period would take place again, the data lines would be detected after the voltage signal (for display) is charged in the previous frame. Appellant respectfully disagrees. In particular, claim 1 recites "the scan-line-direction touch position and the data-line-direction touch position indicate a position of the touch point." In other words, it is clear that the second touch-position sensing step (for data lines) occurs after the first touch-position sensing step (for scan lines) because the second touch-position sensing step is performed after the voltage signal is charged and the first touch-position sensing step is performed before the voltage signal is charged. Unlike the present invention, Nohno in FIG. 6 discloses that the X-coordinate Detection step (for data lines) is performed before Y-coordinate Detection Period (for scan lines) in the same frame, which is in an opposite order to the claimed invention.

Appellant respectfully submits that the fist touch-position sensing step occurs before the second touch-position sensing step in the present invention. Because the off time of the scan lines is more than that of the data lines, the scan-line-direction touch position has more times to be detected to lessen the detecting area of the second touch-position sensing step. Additionally, after the scan-line-direction touch position is detected, the voltage is charged into each of the data lines needed to be detected so as to subsequently detect values of liquid crystal capacitances formed between the data lines and the counter electrode, and to detect a data-line-direction touch

position according to the values of the liquid crystal capacitances formed between the data lines and the counter electrode to obtain the correct touch position.

With regard to the Examiner's reliance on Ikeda, this reference has only been relied on for its teachings of the counter electrode panel. This reference also fails to disclose the above combination of steps as set forth in independent claim 1. Accordingly, Ikeda fails to cure the deficiencies of Nohno.

Accordingly, neither of the references utilized by the Examiner individually or in combination teaches or suggests the limitations of independent claim 1 or its dependent claims. Therefore, Appellant respectfully submits that independent claim 1 and its dependent claims clearly define over the teachings of the references relied on by the Examiner.

Claims 16-28

Independent claim 16 recites a combination of elements including "a first sensing circuit, which respectively electrically connects to the scan lines needed to be detected, detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, and detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode", "a timing control circuit, which electrically connects to the first sensing circuit and controls the first sensing circuit to detect the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in

the writing periods", "a voltage-signal generating circuit, which electrically connects to the timing control circuit and each of the data lines, wherein the timing control circuit controls the voltage-signal generating circuit to charge a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected" and "a second sensing circuit, which respectively electrically connects to each of the data lines needed to be detected, detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is charged".

Appellant respectfully submits that the above combination of elements as set forth in independent claim 16 is not disclosed nor suggested by the references relied on by the Examiner.

In the present invention, the values of liquid crystal capacitances formed between the counter electrode panel and the scan lines are detected, respectively, during the idling time in-between writing periods. As defined in the specification, the writing period is the period in which each of the scan lines turns on sequentially to write image data into the LCD screen. In other words, the idling time is the time interval between the writing periods.

Unlike the present invention, Nohno in FIG. 6 discloses that one frame is time-sharingly divided into a coordinate detection period and a display period. In other words, the coordinate detection period (an X-coordinate Detection Period (by driving data lines) and a Y-coordinate Detection Period (by driving scan lines)) is within one frame, not in-between two frames. Therefore, Nohno fails to teach "detect the liquid crystal capacitances formed between the scan

lines needed to be detected and the counter electrode during idling time in-between writing periods" as recited in claim 16.

Nohno in FIG. 6 also discloses that the coordinate detection operation is performed in an X-coordinate Detection Period (by driving data lines) **first**, and **then** a Y-coordinate Detection Period (by driving scan lines). Accordingly, the X-coordinate Detection Period (by driving data lines) occurs before the Y-coordinate Detection Period (by driving scan lines). Therefore, Nohno also fails to teach "charge a voltage signal into each of the data lines needed to be detected **after** the scan-line-direction touch position is detected" and "a second sensing circuit ... detects a data-line-direction touch position... after the voltage signal is charged" as recited in claim 16.

The Examiner seemed to construe that since in one frame the display period is after the coordinate detection period, the voltage signal (for display) is charged into the data lines after the scan line detection take places, and that since in the next frame the coordinate detection period would take place again, the data lines would be detected after the voltage signal (for display) is charged in the previous frame. Appellant respectfully disagrees. In particular, claim 16 recites "charge a voltage signal into each of the data lines needed to be detected **after** the scan-line-direction touch position is detected" and "a second sensing circuit ... detects a data-line-direction touch position... after the voltage signal is charged" In other words, it is clear that the second touch-position detection (for data lines) occurs after the first touch-position detection (for scan lines) because the second touch-position detection is performed after the voltage signal is charged and the first touch-position detection is performed before the voltage signal is charged. Unlike the present invention, Nohno in FIG. 6 discloses that the X-coordinate Detection (for data lines) is performed

before Y-coordinate Detection Period (for scan lines) in the same frame, which is in an opposite order to the claimed invention.

Appellant respectfully submits that the fist touch-position detection occurs before the second touch-position detection in the present invention. Because the off time of the scan lines is more than that of the data lines, the scan-line-direction touch position has more times to be detected to lessen the detecting area of the second touch-position sensing step. Additionally, after the scan-line-direction touch position is detected, the voltage is charged into each of the data lines needed to be detected so as to subsequently detect values of liquid crystal capacitances formed between the data lines and the counter electrode, and to detect a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines and the counter electrode to obtain the correct touch position.

With regard to the Examiner's reliance on Ikeda, this reference has only been relied on for its teachings of the counter electrode panel. This reference also fails to disclose the above combinations of elements as set forth in independent claim 16. Accordingly, Ikeda fails to cure the deficiencies of Nohno.

Accordingly, neither of the references utilized by the Examiner individually or in combination teaches or suggests the limitations of independent claim 16 or its dependent claims. Therefore, Appellant respectfully submits that independent claim 16 and its dependent claims clearly define over the teachings of the references relied on by the Examiner.

In summary, it is believed that independent claims 1 and 16, as well as the dependent claims are neither suggested nor rendered obvious by the prior art utilized by the Examiner. It is

believed that the Appellant has countered all the reasons given for the rejections of the appealed claims, and thus these rejections do not appear to be proper. Accordingly, it is respectfully requested that this Board reverse the final rejection of claims 1-28.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: January 18, 2007

Respectfully submitted,

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Attachments: Claims Appendix
Evidence Appendix
Related Proceedings Appendix

VIII. CLAIMS APPENDIX

1. (Previously Presented) A touch-control method of an LCD, which is to sense a touch point on an LCD screen of the LCD, the LCD comprising a counter electrode and a substrate having a plurality of data lines and a plurality of scan lines, the method comprising:

a first touch-position sensing step, which detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, respectively, and detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in the writing periods;

a charging step, which charges a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected; and

a second touch-position sensing step, which detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, respectively, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is charged,

wherein, the scan-line-direction touch position and the data-line-direction touch position indicate a position of the touch point.

2. (Original) The method of claim 1, wherein when the scan-line-direction touch position is not detected in the first touch-position sensing step, the first touch-position sensing step is repeated.

3. (Original) The method of claim 1, wherein when the data-line-direction touch position is not detected in the second touch-position sensing step, the first touch-position sensing step is repeated.

4. (Original) The method of claim 1, wherein the substrate is a TFT substrate.

5. (Previously Presented) The method of claim 1, wherein when detecting the liquid crystal capacitances formed between the scan lines and the counter electrode, at least one of the scan lines is skipped in the first touch-position sensing step.

6. (Previously Presented) The method of claim 1, wherein when detecting the liquid crystal capacitances formed between the data lines and the counter electrode, at least one of the data lines is skipped in the second touch-position sensing step.

7. (Original) The method of claim 1, further comprising:

a comparing-value setting step, which sets at least one scan-line comparing value and at least one data-line comparing value.

8. (Previously Presented) The method of claim 7, wherein when a liquid crystal capacitance (C_k) formed between one of the scan lines and the counter electrode is greater than the scan-line comparing value, the first touch-position sensing step determines the location of the scan line corresponding to the liquid crystal capacitance (C_k) is the scan-line-direction touch position.

9. (Previously Presented) The method of claim 7, wherein when a liquid crystal capacitance (C_l) formed between one of the data lines and the counter electrode is greater than the data-line comparing value, the second touch-position sensing step determines the location of the data line corresponding to the liquid crystal capacitance (C_l) is the data-line-direction touch position.

10. (Previously Presented) The method of claim 7, wherein the scan-line comparing value is equal to a predetermined value plus a minimum value of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode.

11. (Previously Presented) The method of claim 7, wherein the data-line comparing value is equal to a predetermined value plus a minimum value of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode.

12. (Previously Presented) The method of claim 7, wherein the scan-line comparing value is equal to a predetermined value plus one of the values of the previously detected liquid crystal capacitances formed between the counter electrode and the scan lines.

13. (Previously Presented) The method of claim 7, wherein the data-line comparing value is equal to a predetermined value plus one of the values of the previously detected liquid crystal capacitances formed between the counter electrode and the data lines.

14. (Previously Presented) The method of claim 7, wherein the scan-line comparing value is equal to a predetermined value plus an average of at least two values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode.

15. (Previously Presented) The method of claim 7, wherein the data-line comparing value is equal to a predetermined value plus an average of at least two values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode.

16. (Previously Presented) An LCD (liquid crystal display), which has a counter electrode and a substrate having a plurality of data lines and a plurality of scan lines, comprising:

a first sensing circuit, which respectively electrically connects to the scan lines needed to be detected, detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, and detects a scan-line-direction touch position according

to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode;

a timing control circuit, which electrically connects to the first sensing circuit and controls the first sensing circuit to detect the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in the writing periods;

a voltage-signal generating circuit, which electrically connects to the timing control circuit and each of the data lines, wherein the timing control circuit controls the voltage-signal generating circuit to charge a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected; and

a second sensing circuit, which respectively electrically connects to each of the data lines needed to be detected, detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is charged.

17. (Previously Presented) The LCD of claim 16, wherein when the first sensing circuit detects the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, at least one of the scan lines is skipped.

18. (Previously Presented) The LCD of claim 16, wherein when the second sensing circuit detects the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, at least one of the data lines is skipped.

19. (Original) The LCD of claim 16, wherein the substrate is a TFT substrate.

20. (Original) The LCD of claim 16, further comprising:

a comparing-value setting circuit, which respectively electrically connects to the first sensing circuit and the second sensing circuit, and sets at least one scan-line comparing value to be input to the first sensing circuit and at least one data-line comparing value to be input to the second sensing circuit.

21. (Previously Presented) The LCD of claim 20, wherein when a liquid crystal capacitance (C_k) formed between one of the scan lines and the counter electrode is greater than the scan-line comparing value, the first sensing circuit determines that the location of the scan line corresponding to the liquid crystal capacitance (C_k) is the scan-line-direction touch position.

22. (Previously Presented) The LCD of claim 20, wherein when a liquid crystal capacitance (C_l) formed between one of the data lines and the counter electrode is greater than the data-line comparing value, the second sensing circuit determines that the location of the data line corresponding to the liquid crystal capacitance (C_l) is the data-line-direction touch position.

23. (Previously Presented) The LCD of claim 20, wherein the scan-line comparing value is equal to a predetermined value plus a minimum value of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode.

24. (Previously Presented) The LCD of claim 20, wherein the data-line comparing value is equal to a predetermined value plus a minimum value of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode.

25. (Previously Presented) The LCD of claim 20, wherein the scan-line comparing value is equal to a predetermined value plus one of the values of the previously detected liquid crystal capacitance formed between the counter electrode and the scan lines.

26. (Previously Presented) The LCD of claim 20, wherein the data-line comparing value is equal to a predetermined value plus one of the values of the previously detected liquid crystal capacitance formed between the counter electrode and the data lines.

27. (Previously Presented) The LCD of claim 20, wherein the scan-line comparing value is equal to a predetermined value plus an average of at least two values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode.

28. (Previously Presented) The LCD of claim 20, wherein the data line comparing value is equal to a predetermined value plus an average of at least two values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None